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ABSTRACT

Recent reports on the relationship between nutritional deficiencies and reading disabilities include the following findings: many children are undernourished but not underfed; undernutrition may decrease learning time, interfere with learning at critical periods of development, and lead to motivational and personality changes; inadequate diet causes reduced responsiveness and attentiveness, easy fatigue, and inability to sustain prolonged effort; diet improvement results in better learning, fewer absences, and added social, physical, and educational benefits; and iron deficiency, found in 40% of the school age population, leads to poor attention span, apathy, listlessness, and poor scores on measures of intellectual growth. It has also been found that school lunch menus and vending machine foods may contribute to poor nutrition. Recommendations that are made for educators to remedy this situation include: integrate nutrition education into the reading curriculum; educate teachers, administrators, and parents in nutrition; give students input into cafeteria menu planning; and have the diet records of all students having chronic learning or behavioral problems professionally analyzed. (DF)

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SWEET AND SLOW: THE RELATIONSHIP BETWEEN NUTRITION AND READING DISABILITY

Paper Presented

at

The Annual Meeting of the College Reading Association
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SWEET AND SLOW: THE RELATIONSHIP
BETWEEN NUTRITION AND READING DISABILITY

Recently there has been a rise of interest in investigating the dietary habits of children who have reading/learning disabilities. The International Reading Association has formed an Ad Hoc committee to study relationships between diet and learning. Classroom teachers need to be informed of developments along these lines, since they are the ones charged with the diagnosis and remediation of reading difficulties and the excellence of the developmental program. There is no empirical data presently available to determine how many school-age children fail to reach their full educational potential due to improper eating habits, although it is generally believed that some students may be handicapped by poor food habits.

An Associated Press article (McKean, 1979) stated that according to nutritional experts, many American children are malnourished not because they do not eat enough, but because they eat too many sugary, salty or fatty foods. Surveys show that from 15 to 20 percent of American children aged 6 to 11 are overweight and from 6 to 24 percent have high blood cholesterol levels.

According to Adler (1978), Cott (1977), and Ramon (1975) nutrition is critical to the physical well-being, neurological function and learning, and to the educational motivation of an

individual. The physical, chemical and physiologic development of the brain and the consequent behavior in humans evolves from the continuous interaction of genetic and environmental factors. Undernutrition may decrease learning time, interfere with learning during critical periods of development, and lead to motivational and personality changes, any one of which may impair learning performance (National Dairy Council, 1979).

In a booklet prepared by the Department of Citrus of Florida (1979), George Briggs, founder of the Society for Nutrition Education, asserts that children on an inadequate diet show reduced responsiveness and attentiveness, are easily fatigued, and unable to sustain prolonged physical or mental effort. Diet improvement, which always includes an adequate breakfast, results in better school work, fewer absences and added social, physical and educational benefits. Surveys indicate that 40% of the nation's school-age population exhibit some form of iron deficiency and 10% are anemic. Studies have shown that iron deficiency leads to poor attention span, apathy and listlessness; symptoms reflected in poor scores on vocabulary and I.Q. tests and other measures of intellectual growth.

Hugh W. S. Powers, Jr. (1973-74), a Dallas physician, has used diet to change behavior and increase learning. He cited the case of a 16-year old who had emotional problems and little energy. He had a continuing reading/learning problem. The subject was on a high carbohydrate diet with a concentration of caffeine cola drinks. The young man was placed on a high protein

diet, with a reduction of carbohydrates and the elimination of caffeine drinks including colas. In two months, he was doing well in school and his behavior had improved immeasurably. This is just one example in which diet was utilized to improve learning ability.

William G. Crook (1973), a Florida physician, treated 160 hyperactive children with an adjusted diet. When certain foods were eliminated, most subjects showed significant improvement in one to three weeks. He believes children can be helped to achieve better in school by diet alteration.

Adler (1978) wrote about the allergic child in the classroom. S/he can be recognized by one or more visual or auditory signs. S/he may throw objects about the room or burst out with unintelligible spontaneous noises, often unaware of her/his disruptive influence. This child can hardly attend in the classroom and has a variety of learning problems. Adler believes nutritional therapy can eliminate the cause of dysfunction, and he has used it along with other behavior management strategies in the treatment of children with behavior/learning difficulties.

Benjamin Feingold (1975), a physician at Kaiser Permanente in San Francisco has achieved changes in student behavior with diet. Certain children who were sensitive to synthetic flavoring and coloring, were put on diets eliminating these substances. They became calmer and more responsive in school with longer attention spans and improvements in scholastic behavior. An important factor in the treatment was the discontinuance of

medication for behavior control. Many parents, educators and physicians deplore the use of drugs when other measures can achieve good results. It should be noted that Dr. Feingold's theories are controversial, and many studies are being conducted to verify his work. However, an expert panel of the Institute of Food Technologists believes there is enough evidence to merit further study (1976, "Diet and Hyperactivity: Any Connection").

One problem is that the typical school lunch menus may contribute to poor nutrition. The usual menu may contain devitalized white bread with many additives and preservatives, sweetened fruits, frankfurters and luncheon meats high in nitrates and nitrites, sweetened fruit punches, and chemically made ice cream. There is some evidence that these kinds of foods may not be of benefit to the learner.

Some school systems and state education authorities have made changes in food served in lunch programs and vending machines. In West Virginia, Colorado, Ohio, Georgia and California, school systems have introduced well-balanced lunches prepared from scratch, and containing no preservatives or additives. They have also eliminated vending machines in the schools so that children can no longer purchase candy bars, pretzels, potato chips, soft drinks and other empty calorie foods during school hours.

In July, 1979, the U.S. Department of Agriculture proposed a nutritional standard for food sold in competition with federally subsidized meal programs in the nation's schools. In response to an amendment to the Child Nutrition Act, November, 1977, USDA

allowed states and districts to regulate the sale of foods which are of "minimal nutritional value." "Minimal nutritional value" is operationally defined as foods which supply less than five percent of the U.S. RDA for one or more of eight specified nutrients, i.e., protein, vitamin A, ascorbic acid, niacin, riboflavin, thiamin, calcium and iron.

This standard would limit the sale of soda water, water ices, chewing gum, and some candies. In compliance with this proposal, the 112th Ohio General Assembly required that all school districts establish standards which shall be used for approving all food sold in schools (Food and Nutrition Service News, 1979).

What are the implications for educators, particularly the reading teacher, interested in the child's potential for the best learning possible? First, the teachers should become instrumental in integrating nutrition education into the reading curriculum. It is not a "health" subject anymore. Children need to know how to eat from the time they are very young. If nutrition permeates the curriculum, the students will have a better chance to grow up knowing how to eat properly. Nutrition education which is integrated into the existing curriculum will encourage students to relate nutrition to a variety of subjects and to critically evaluate their food choices based on acquired nutrition knowledge (White House Conference, 1970).

Teachers, administrators and parents need to be educated in good nutrition. Teachers should consider nutritious snacks

in lieu of giving candy and other junk foods as rewards for good work, a common practice in many schools. Administrators need to be aware of optimum diet considerations so they may have some input into the school lunch program. Parents need to know that children require good breakfasts and other nourishing meals in order to work well in school.

Students should have input into menu planning for the cafeteria. The food service people, administrators, teachers and nutritionists can meet with the students periodically to discuss which foods should be included in the school lunch program and attractive ways they can be served.

Concerned parents, along with state legislators and state boards of education, need to pass laws and adopt policies that will restrict distribution of soft drinks and junk foods in the schools. More natural unsweetened juices and vegetables should be included in school lunches. If there are vending machines, they should contain nuts, seeds and fruit juices.

Finally, all students considered for special education or those that have chronic learning or behavior problems should have their diet records analyzed by a nutritionist or pediatrician to determine nutrient intake and value. At the New York Institute for Child Development (1979), a seven-day diet record is part of the full diagnostic evaluation for the diagnosis and treatment of hyperactive, learning disabled, and underachieving children. The diet record is analyzed by the nutritionist and pediatrician for nutrient intake and value, the amount and source of carbohydrates

and the frequency of eating. The nutritional program is then based on laboratory analysis, the patient's reported medical and developmental history, the family medical history and life-style, and the findings of the pediatrician's clinical evaluation of the child.

If we, as reading teachers, are concerned with the well-being of children who are in our classrooms, we must consider other things besides scores on a test. We should do all we can to insure that the learner is ready to receive the instruction we are giving. A malnourished student may not be able to read because of diet, not a lack of skills. The biological and neurological systems of students must function properly before they can master normal academic requirements.

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